

**FINANCIAL ASSISTANCE
FUNDING OPPORTUNITY ANNOUNCEMENT**



U.S. Department of Energy

Innovative Energy Systems Challenge

Funding Opportunity Number: DE-PS36-06GO96009

Announcement Type: Modification 001

CFDA Number: 81.086

Issue Date: 10/20/2005

Letter of Intent Due Date: 12/07/2005

Pre-Application Due Date: Not Applicable

Application Due Date: 01/25/2006 at 6:00 PM Eastern Time

DATE: December 21, 2005

FROM: Matthew A. Barron, Contracting Officer

TO: All Prospective Applicants

SUBJECT: Amendment No. 001 to Funding Opportunity Announcement (FOA) No. DE PS36-06GO96009, Innovative Energy Systems Challenge

The FOA is amended as follows:

- A. On the title page of this FOA the Application Due Date is changed to read 02/08/06 at 6:00PM Eastern Time.
- B. Under PART I – FUNDING OPPORTUNITY DESCRIPTION, the following paragraph is added after the 5th paragraph of this Part:

Under this Announcement, DOE is not seeking projects that generate and/or supply an alternative energy or fuel source for use in a chemical plant. However, projects which involve the integration of alternative energy or fuel sources into a chemical plant in an innovative way would be considered responsive. Additionally, projects that apply narrowly to one specific chemical process or sector of the chemical industry must establish that its application can meet the energy savings goals of the Announcement (see below). Applications should also address the applicability of the proposed technology across the chemicals industry.

- C. Under Part IV - APPLICATION AND SUBMISSION INFORMATION, Section C.2. Other Attachments Form, the sentence in the first bullet under Energy Benefits, Economic Viability and Environmental Benefits section is changed to read:

The application should show how the proposed technology will achieve energy savings over existing technology and how the technology will meet the goal of 27 trillion Btu in the year 2020 as set forth in Part I of the announcement.

- D. Under PART IV - APPLICATION AND SUBMISSION INFORMATION, Section E. SUBMISSION DATES AND TIMES, item 2. Application Due Date, the first sentence is changed to read:

Applications **must be received by February 08, 2006, not later than 6:00 P.M. Eastern Time.**

- E. Under Part V – APPLICATION REVIEW INFORMATION, Section A.2. Merit Review Criteria, the first sentence of the first bullet in Criterion 2 is changed to read:

The potential for the proposed technology to achieve 27 trillion Btus in energy savings over existing technology in the year 2020.

NOTE: NEW REQUIREMENTS FOR GRANTS.GOV

Where to Submit

Applications must be submitted through Grants.gov to be considered for award.

Registration Requirements

There are several onetime actions you must complete in order to submit an application through Grants.gov (e.g., obtain a Dun and Bradstreet Data Universal Numbering System (DUNS) number, register with the Central Contract Registry (CCR), register with the credential provider, and register with Grants.gov). See <http://www.grants.gov/GetStarted> Use the Grants.gov Organization Registration Checklist at <http://www.grants.gov/assets/OrganizationRegCheck.doc> to guide you through the process. Designating an EBusiness Point of Contact (EBiz POC) and obtaining a special password called an MPIN are important steps in the CCR registration process. **Applicants who are not registered with CCR and Grants.gov should allow at least 14 days to complete these requirements. It is suggested that the process be started as soon as possible.**

Questions

Questions relating to the registration process, system requirements, how an application form works, or the submittal process must be directed to Grants.gov at 1-800-518-4726 or support@grants.gov. Part VII of this announcement explains how to submit other questions to the Department of Energy (DOE).

Application Receipt Notices

After an application is submitted, the Authorized Organization Representative (AOR) will receive a series of four emails. It is extremely important that the AOR watch for and save each of the emails. It may take up to two (2) business days from application submission to receipt of e-mail Number 2. You will know that your application has reached DOE when the AOR receives email Number 4. You will need the Submission Receipt Number (e-mail Number 1) to track a submission. The titles of the four e-mails are:

Number 1 - Grants.gov Submission Receipt Number

Number 2 - Grants.gov Submission Validation Receipt for Application Number

Number 3 - Grants.gov Grantor Agency Retrieval Receipt for Application Number

Number 4 - Grants.gov Agency Tracking Number Assignment for Application Number

VERY IMPORTANT – Download PureEdge Viewer

In order to download the application package, you will need to install PureEdge Viewer. This small, free program will allow you to access, complete, and submit applications electronically and securely. For a free version of the software, visit the following web site:

<http://www.grants.gov/DownloadViewer>

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PART I – FUNDING OPPORTUNITY DESCRIPTION

The U.S. Department of Energy (DOE) Office of Energy Efficiency and Renewable Energy (EERE) is seeking applications for cost-shared research, development, and demonstration of Innovative Energy Systems that can be widely applied throughout the U.S. Chemical Industry. Energy Systems, referred to in this announcement as the Energy Supply Chain, are defined as those technologies and systems, located on or near the chemical plant, that produce and/or transport energy (electrical, thermal, mechanical) to the process, and/or recycle waste energy streams resulting from the chemical process. The Energy Supply Chain in this announcement excludes the chemical process itself. DOE is only requesting applications for only those projects that do not duplicate development of technologies currently being funded elsewhere within DOE's Industrial Technologies and Distributed Energy Programs

Working with ITP, the Chemical Industry Vision 2020 Technology Partnership (Vision 2020) recognized innovative energy supply chain technologies applied to chemical facilities in the U.S. can improve productivity, reduce costs, increase energy efficiency, and positively effect environmental impacts. Collectively, inefficiencies in on-site and off-site energy generation, transmission, conversion, and distribution systems are estimated to account for energy losses of more than 2.7 quadrillion Btus (quads) annually solely in the chemical industry. Vision 2020 estimates that innovative technologies and systems applied to the energy supply chain could cost-effectively achieve a 30% reduction in these on and off-site energy losses by 2020. This would result in energy savings of more than 700 trillion Btus per year, valued today at about \$4 to \$8 billion.

To address these significant energy savings opportunities, DOE is seeking applications for next generation technologies and systems which have both significant impacts in individual facilities as well as the potential to have widespread application in the chemical industry. Technology areas to be addressed include a) energy conversion; b) energy recovery; and c) crosscutting/systems applications. DOE is not looking to make small incremental changes to existing equipment options or components, but is looking for breakthrough approaches which affect plant systems and can measurably affect plant energy use. While the Innovative Energy Systems Challenge also foresees energy efficiency opportunities in other energy-intensive industrial sectors, such as forest products (pulp and paper mills), petroleum refining, steel, glass and food processing, applications for projects in these areas are not requested in this Announcement.

Note that the Energy Supply Chain in this announcement excludes the chemical process itself. However, there is a need to perform R&D on the integration and optimization of energy systems into a chemical plant. For the energy intensive chemical industry, improvements in the efficiency and environmental performance of these energy systems can significantly impact the cost of production.

Energy conversion system projects awarded from this Announcement are expected to significantly advance/integrate the state of the art in technologies such as direct and indirect fired heaters, heat exchange systems, chillers, furnaces, compressed air systems, pumps, and others. Energy recovery systems projects are expected to advance/integrate technologies in the area of waste heat recovery and upgrade systems, separation and recovery of waste products and emissions with fuel or feedstock value, as well as technologies that allow a more robust handling of corrosive/polluted waste streams to allow energy recycle. Finally, applications addressing systems integration should advance technologies in areas of optimization of heat and fuel use, combined heat & power systems, energy storage/transport

systems, and other similar areas. The above technologies are examples when considering application topics and DOE encourages the responders to this Announcement to be creative, innovative, and propose technology solutions to address real needs that have the potential to make significant improvements and be both technically and financially viable.

DOE already has a substantial portfolio of ongoing R&D that will result in advanced industrial boilers, high efficiency and low emission prime movers and other advanced concepts. It is not the intent of this announcement to duplicate or make incremental changes to any of that ongoing work. Technologies currently being funded by DOE's Industrial Technologies Program can be found at: <http://www.eere.energy.gov/industry/> Technologies in the area of Distributed Energy can be found at <http://www.eere.energy.gov/de/>

The long-term goal of the DOE and Vision 2020 Partnership is to cost-effectively achieve a 30% reduction in the more than 2.7 quads of energy supply chain annual losses in the U.S. chemical industry by the year 2020. This Announcement will initiate the process of reaching that goal. Any proposed technology resulting from this Announcement, once fully marketed, must have the potential to contribute at least 1% or 27 trillion Btu toward the long-term goal.

Projects resulting from this Announcement will be carried out in two phases. Phase I efforts will address concept definition, technology development, and commercialization plans/activities resulting in "proof of concept" for the proposed technology/system. It is anticipated that the Phase I Awards shall be of a 12 to 24 month duration. Phase II efforts shall include final engineering development and demonstration of the proposed technology/system. Phase II shall require the involvement and financial commitment of a chemical industry partner to install & test the concept at their facility. This Announcement will request a detailed proposal (technical and cost) for Phase I activities. It shall also be required that the Phase I proposals provide initial information (technical and cost) regarding their planned Phase II activities. DOE anticipates making 4 to 8 awards for Phase I.

It is anticipated that there will be a down select made between Phase I and Phase II. Only Phase I participants will be considered for follow-on Phase II activities. All Phase I participants will be given the opportunity at the end of Phase I to submit an updated detailed proposal (technical and cost) for the follow-on Phase II activities. The criteria to be utilized for down selection will be made available to all Phase I participants. DOE anticipates selecting and continuing with 2 to 4 projects into Phase II.

Approximately \$4,000,000 in federal funds is estimated to be available to fund Phase I awards. The agreements shall be awarded in accordance with DOE Financial Assistance Regulations, 10CFR600. Successful applicants shall be required to submit quarterly reports and final reports to DOE at the end of Phase I and Phase II. A twenty percent (20%) non-federal cost share is the minimum requirement for Research & Development projects in Phase I and eighty percent (80%) non-federal cost share minimum is required for projects in Phase II for final engineering development and demonstration. DOE will consider reducing the Phase II non-federal cost share requirement at the end of Phase I to no lower than 50% if the project can demonstrate that sufficient risk remains and that the additional DOE provided cost share is required to enhance commercial success. However, initial applications must include 80% non-federal cost share for Phase II to be considered. Cost share may be provided as cash or as-kind contributions. Cost share may not be other federal funding, including federal funding of a national laboratory through another contract vehicle (see 10CFR600.123 and 10CFR600.127 for non-profits and 10CFR600.313 and 10CFR600.317 for for-profit organizations).

All applicants shall follow the StageGate Process in managing their projects (see Appendix C for a discussion of the StageGate Process). The applications shall indicate which stage the technology is in at the time the application is submitted, and what stage(s) it will pass through during Phase I and/or Phase II activities. It is anticipated that most Phase I activities will be in either Stage 2– Concept Definition/Detailed Investigation or Stage 3 Concept Development (and will already be beyond Stage 1 – Preliminary Investigation). It is anticipated that most Phase II activities will require passing into Stage 4 Validation/Technology Development. DOE will utilize the stage gate process to help determine which project(s) will proceed through the down-select process into the Phase II efforts. Due to the possibility that future fiscal year funds may be limited, it is anticipated that some projects shall not be selected to continue into the Phase II activities, even if all milestones for the Phase I efforts are successfully met.

All awards under this announcement will have requirements for reporting to DOE. Progress and financial status reports will be required on a quarterly basis and a detailed final report will be required at the end of the project. In addition, peer and/or technical review meetings will be held approximately once per year. Applicants should estimate travel expenses for these review meetings and include these expenses in their proposed budget.

For more information, please see the following references:

1) Opportunities for Innovative Energy Systems in the U.S. Chemical Industry; Updated March 18, 2004; Prepared by the: Chemical Industry Vision2020 Technology Partnership (Vision2020)'s Challenge Technical Committee; Available at:

http://www.chemicalvision2020.org/pdfs/challenge_opportunities.pdf

2) Technology Roadmap: Energy Loss Reduction and Recovery in Industrial Energy Systems; November 2004; Prepared by Energetics; Incorporated For the U.S. Department of Energy Office of Energy Efficiency and Renewable Energy Industrial Technologies Program; Available at: http://www.eere.energy.gov/industry/energy_systems/pdfs/reduction_roadmap.pdf

PART II – AWARD INFORMATION

A. TYPE OF AWARD INSTRUMENT.

- DOE anticipates awarding grants under this program announcement.

B. ESTIMATED FUNDING. Approximately \$4,000,000 is expected to be available for Phase I new awards under this announcement. An additional \$4,000,000 is expected to be available to fund those projects proceeding to Phase II.

C. MAXIMUM AND MINIMUM AWARD SIZE.

- Ceiling (i.e., the maximum amount for an individual award made under this announcement): \$1,000,000.00 for Phase I; \$2,000,000.00 for Phase II
- Floor (i.e., the minimum amount for an individual award made under this announcement): None

D. EXPECTED NUMBER OF AWARDS. DOE anticipates making 4 to 8 awards under this announcement depending on the size of the awards.

E. ANTICIPATED AWARD SIZE. While the maximum award size per award (i.e., the ceiling) is \$1,000,000 for Phase I and \$2,000,000 for Phase II, DOE anticipates that awards will be in the \$1,000,000 to \$2,000,000 range per award for the total project period.

F. PERIOD OF PERFORMANCE. DOE anticipates making awards that will run for up to 24 months for Phase I and an additional 24 months for Phase II

PART III - ELIGIBILITY INFORMATION

A. ELIGIBLE APPLICANTS. All types of domestic applicants are eligible to apply, except other Federal agencies, Federally Funded Research and Development Center (FFRDC) Contractors, and nonprofit organizations described in section 501(c)(4) of the Internal Revenue Code of 1986 that engaged in lobbying activities after December 31, 1995.

B. COST SHARING

- The cost share must be at least 20% for Phase I and 80% of Phase II of the total allowable costs of the project (i.e., the sum of the Government share, including FFRDC contractor costs if applicable, and the recipient share of allowable costs equals the total allowable costs of the projects) and must come from non-Federal sources. (See 10 CFR part 600 for the applicable cost sharing requirements.)

C. OTHER ELIGIBILITY REQUIREMENTS.

- **Federally Funded Research and Development Center (FFRDC) Contractors**
FFRDC applicants are not eligible for an award under this announcement, but they may be proposed as a team member subject to the following guidelines:

Authorization for non-DOE/NNSA FFRDCs. The Federal agency sponsoring the FFRDC contractor must authorize in writing the use of the FFRDC contractor on the proposed project and this authorization must be submitted with the application. The use of a FFRDC contractor must be consistent with the contractor's authority under its award and must not place the FFRDC contractor in direct competition with the private sector.

Authorization for DOE/NNSA FFRDCs. The cognizant contracting officer for the FFRDC must authorize in writing the use of a DOE/NNSA FFRDC contractor on the proposed project and this authorization must be submitted with the application. The following wording is acceptable for this authorization.

"Authorization is granted for the _____ Laboratory to participate in the proposed project. The work proposed for the laboratory is consistent with or complimentary to the missions of the laboratory, will not adversely impact execution of the DOE/NNSA assigned programs at the laboratory, and will not place the laboratory in direct competition with the domestic private sector."

Value/Funding. The value of, and funding for, the FFRDC contractor portion of the work will not normally be included in the award to a successful applicant. Usually, DOE/NNSA will fund a DOE/NNSA FFRDC contractor through the DOE field work proposal system and other FFRDC contractors through an interagency agreement with the sponsoring agency.

Cost Share. The applicant's cost share requirement will be based on the total cost of the project, including the applicant's and the FFRDC contractor's portions of the effort.

FFRDC Contractor Effort. The FFRDC contractor effort, in aggregate, shall not exceed 30% of the total estimated cost of the project, including the applicant's and the FFRDC contractor's portions of the effort.

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Responsibility. The applicant, if successful, will be the responsible authority regarding the settlement and satisfaction of all contractual and administrative issues, including but not limited to, disputes and claims arising out of any agreement between the applicant and the FFRDC contractor.

PART IV – APPLICATION AND SUBMISSION INFORMATION

A. ADDRESS TO REQUEST APPLICATION PACKAGE.

Application forms and instructions are available at Grants.gov. To access these materials, go to <http://www.grants.gov>, select "Apply for Grants," and then select "Download Application Package." Enter the CFDA and/or the funding opportunity number located on the cover of this announcement and then follow the prompts to download the application package. **NOTE:** You will not be able to download the Application Package unless you have installed PureEdge Viewer (See: <http://www.grants.gov/DownloadViewer>).

B. LETTER OF INTENT AND PREAPPLICATION.

1. Letter of Intent

- Applicants are requested to submit a letter of intent by **December 07, 2005**. This letter should include the name of the applicant, the title of the project, the name of the Project Director/Principal Investigator(s), the amount of funds requested, and one-page abstract. Letters of intent will be used to organize and expedite the merit review process. Failure to submit such letters will not negatively effect a responsive application submitted in a timely fashion. The letter of intent should be sent by E-mail to IES@go.doe.gov.

2. Pre-application

- Pre-applications are not required.

C. CONTENT AND FORM OF APPLICATION – SF 424

You must complete the mandatory forms and any applicable optional forms (e.g. SF-LLL- Disclosure of Lobbying Activities) in accordance with the instructions on the forms and the additional instructions below. **Files that are attached to the forms must be in Adobe Portable Document Format (PDF) unless otherwise specified in this announcement.**

1. SF 424 - Application for Federal Assistance.

Complete this form first to populate data in other forms Complete all required fields in accordance with the pop-up instructions on the form. To activate the instructions, turn on the "Help Mode" (Icon with the pointer and question mark at the top of the form).

2. Other Attachments Form

Submit the following files with your application and attach them to the Other Attachments Form. Click on "Add Mandatory Other Attachment" to attach the Project Narrative. Click on "Add Optional Other Attachment," to attach the other files.

Project Narrative File- Mandatory Other Attachment

The project narrative must not exceed 20 pages, including charts, graphs, maps, photographs, and other pictorial presentations, when printed using standard 8.5" by 11" paper with 1 inch margins (top, bottom, left, and right). **EVALUATORS WILL REVIEW ONLY THE NUMBER OF PAGES SPECIFIED IN THE PRECEDING SENTENCE.** The

font must not be smaller than 11 point. Do not include any Internet addresses (URLs) that provide information necessary to review the application. See Part VIII.D for instructions on how to mark proprietary application information. Save the information in a single file named "Project.pdf," and click on "Add Mandatory Other Attachment" to attach.

The Project Narrative should be structured as follows:

Project Description and Implementation Plan

- The proposal must include narrative to show responsiveness to the research priorities identified in this announcement including a description of where in the energy supply chain the proposed technology/concept fits and how it addresses an industry need.
- Explanation/description of the technical merit, quality, and feasibility of the proposed work (i.e., whether it is based on sound scientific/engineering principles and on an understanding of current state of the art in the applicable industry with references to knowledge of past developments and competing technologies in the work proposed)
- Description of project activities and schedule (description of each activity/task to be performed to accomplish the project goals/objectives and address environmental and safety issues, if appropriate)
- A complete Project Management Plan (task structure, milestones, go/no go decision points, schedules and performance measures for evaluating progress with regard to key tasks/ and/or deliverables) to achieve project objectives; and the proposed approach to resolve challenges, and barriers to be included as a separate attachment as indicated further below)
- Description of proposed resources (budget under various categories), and resource distribution to the team members to complete the proposed project and accomplish the stated objectives

Energy Benefits, Economic Viability and Environmental Benefits

- The application should show how the proposed technology will achieve energy savings over existing technology and how the technology will meet the goals set forth in Part I of the announcement. All projects must utilize the Energy Savings tool located at http://www.energetics.com/ies_tool/. Tool output should be copied and included in the application. The estimate of energy savings (in TBtu/yr) must include all assumptions used for the tool and references; these should be logically presented and easily understood by technical reviewers.
- Description of economic viability of the proposed technology (i.e., probability of commercial application) and the potential for enhancing the economic competitiveness of the domestic industrial end users.
- The estimate of environmental benefits shall be described including the general applicability, timeliness, economic viability, estimated size of the potential economic impact and potential for enhancement of economic competitiveness of the domestic industry. The estimate must include assumptions and references; and these should be logical and easily understood by technical reviewers

Roles, Responsibilities, and Capabilities

- Description of the organization structure and lead organization to achieve project objectives
- Description of team's technical and management qualifications, credentials, capabilities and performance records of all participating organizations and key personnel including consultants with respect to their ability to carry out the proposed effort
- Description of level of participation by project participants as evidenced by letter(s) of commitment, strength of the teaming arrangements or participating organization and the explicit roles each party will take in achieving project objectives
- Description of available equipment, laboratory and demonstration facilities, analytic support and all other necessary resources (including appropriate manpower) for performing the work proposed

Industry Involvement and Commercialization Plan

- Description of the collaboration across industry, academia and other partners
- Description of the project team's characteristics that make them well suited to successfully develop and enable commercialization of the technology
- Description of a viable mechanism, plan, or path to commercialize the technology at the earliest practicable time including the participation of the project's commercial partner(s). See Appendix D of the announcement for additional information regarding commercialization.

Project Summary/Abstract File

The project summary/abstract must contain a summary of the proposed activity suitable for dissemination to the publication. It should be a self-contained document that identifies the name of the applicant, the project director/principal investigator(s) the project title, the objectives of the project, a description of the project, including methods to be employed, the potential impact of the project (i.e., benefits, outcomes), and major participants (for collaborative projects). This document must not include any proprietary or sensitive business information as the Department may make it available to the public. The project summary must not exceed 1 page when printed using standard 8.5" by 11" paper with 1" margins (top, bottom, left and right) with font not smaller than 11 point. Save this information in a file named "Summary.pdf," and click on "Add Optional Other Attachment" to attach.

Project Management Plan (PMP)

All applicants shall follow the Stage-Gate Process in managing their projects (see Appendix C for a discussion of the StageGate Process). The PMP shall indicate which stage the technology is in at the time the application is submitted, and what stage(s) it will pass through during Phase I and/or Phase II activities. It is anticipated that most Phase I activities will be in either Stage 2 Concept Definition/Detailed Investigation or Stage 3 – Concept Development (and will already be beyond Stage 1– Preliminary Investigation). It is also anticipated that most Phase II activities will require passing into Stage 4 – Validation/Technology Development. The PMP should identify the activities/tasks to be performed, a time schedule for the accomplishment of the activities/tasks, the spending plan associated with the activities/tasks, and the expected

dates for the release of outcomes. This plan should identify any decision points and go/no-go decision criteria. Successful applicants must use this plan to report schedule and budget variances. The PMP is limited to 10 pages. Save this plan in a single file named "pmp.pdf" and click on "Add Attachments" in Field 11 to attach.

SF 424A Excel, Budget Information – Non-Construction Programs File

You must provide a separate budget for each year of support requested and a cumulative budget for the total project period. Use the SF 424A Excel, "Budget Information – Non Construction Programs" form on the Applicant and Recipient Page at <http://grants.pr.doe.gov>. You may request funds under any of the Object Class Categories as long as the item and amount are necessary to perform the proposed work, meet all the criteria for allowability under the applicable Federal cost principles, and are not prohibited by the funding restrictions in this announcement (See PART IV, G). Save the information in a single file named "SF424A.xls," and click on "Add Optional Other Attachment" to attach.

Subaward Budget File(s)

You must provide a separate budget (i.e., budget for each budget year and a cumulative budget) for each subawardee that is expected to perform work estimated to be more than \$100,000 or 50 percent of the total work effort (whichever is less). Use the SF 424A Excel for Non Construction Programs. These forms are found on the Applicant and Recipient Page at <http://grants.pr.doe.gov>. Save each Subaward budget in a separate file. Use up to 10 letters of the subawardee's name (plus .xls) as the file name (e.g., ucla.xls or energyres.xls), and click on "Add Optional Other Attachment" to attach.

Certifications/Assurances for Use with SF 424 File

You must complete and provide the "Certifications and Assurances for Use with SF 424" form on the Applicant and Recipient Page at <http://grants.pr.doe.gov>. Submission of an electronic application through Grants.gov constitutes the submission of a signed document. Type the name of the person responsible for providing the certifications and assurances in the signature block and save as a pdf file. Do not submit a scanned copy of the form. Name the file "Certs.pdf," and click on "Add Optional Other Attachment" to attach.

Commitment Letters from Third Parties Contributing to Cost Sharing

If a third party, (i.e., a party other than the organization submitting the application) proposes to provide all or part of the required cost sharing, the applicant must include a letter from the third party stating that it is committed to providing a specific minimum dollar amount of cost sharing. The letter should also identify the proposed cost sharing (e.g., cash, services, and/or property) to be contributed. Letters must be signed by the person authorized to commit the expenditure of funds to the entity. Provide this information in a single file named "CLTP.pdf" and click on "Add Optional Other Attachment" to attach.

Biographical Sketch File

Provide a biographical sketch for each key person proposed, including subawardees and consultants if they meet the definition of key person. A key person is any individual who contributes in a substantive, measurable way to the execution of the project. Save all biographical sketches in a single file named "bio.pdf" and click on "Add Optional Other Attachment" to attach. The biographical information for each person must not exceed 2

pages when printed on 8.5" by 11" paper with 1 inch margins (top, bottom, left, and right) with font not smaller than 11 point and must include:

Education and Training. Undergraduate, graduate and postdoctoral training, provide institution, major/area, degree and year.

Professional Experience: Beginning with the current position list, in chronological order, professional/academic positions with a brief description.

Publications. Provide a list of up to 10 publications most closely related to the proposed project. For each publication, identify the names of all authors (in the same sequence in which they appear in the publication), the article title, book or journal title, volume number, page numbers, year of publication, and website address if available electronically.

Patents, copyrights and software systems developed may be provided in addition to or substituted for publications.

Synergistic Activities. List no more than 5 professional and scholarly activities related to the effort proposed.

Reference Checks on Federal Awards

Applicant must complete and submit the chart provided in Appendix E concerning all federal awards over \$2,500.00 that were received by either the organization or principal investigator from all agencies and for all technologies in the last five years. Save this information in a file named "RCFA.pdf" and click on "Add Optional Other Attachment" to attach.

Budget for DOE/NNSA Federally Funded Research and Development Center (FFRDC)

Contractor, if applicable If a DOE/NNSA FFRDC contractor is to perform a portion of the work, you must provide a DOE Field Work Proposal in accordance with the requirements in DOE Order 412.1 Work Authorization System. This order and the DOE Field Work Proposal form are available at <http://grants.pr.doe.gov>. Use up to 10 letters of the FFRDC name (plus .pdf) as the file name (e.g., lanl.pdf or anl.pdf), and click on "Add Attachments" in Field 11 to attach.

3. SF-LLL Disclosure of Lobbying Activities If applicable, complete SF LLL.

Applicability: If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the grant/cooperative agreement, you must complete and submit Standard Form- LLL, "Disclosure Form to Report Lobbying."

Summary of Required Forms/Files

Your application must include the following documents:

Name of Document	Format	File Name
Application for Federal Assistance– SF424	PureEdge Form	N/A
Other Attachments Form: Attach the following files to this form:	PureEdge Form	N/A
Project Narrative File	PDF	Project.pdf
Project Summary/Abstract File	PDF	Summary.pdf
Project Management Plan	PDF	pmp.pdf
SF 424A File - Budget Information for Non-Construction Programs	Excel	SF424A.xls
Subaward Budget File(s)	Excel	See Instructions
Certifications/Assurances File	PDF	Certs.pdf
Commitment Letters from Third Parties Contributing to Cost Sharing File, if applicable.	PDF	CLTP.pdf
Biographical Sketch File	PDF	Bio.pdf
Reference Checks on Federal Awards	PDF	RCFA.pdf
Budget for FFRDC Contractor, if applicable	PDF	Name.pdf
SF-LLL Disclosure of Lobbying Activities, if applicable.	PureEdge Form	N/A

D. SUBMISSIONS FROM SUCCESSFUL APPLICANTS. Successful applicants must submit the information listed below not later than 21 calendar days after notification of selection. Applicants who fail to provide the information within the required time period may be eliminated from further consideration.

What to submit	Required Form or Format
Designated Responsible Employee for complying with national policies prohibiting discrimination. Provide organization name, project title, DOE application tracking number and the name, title, and phone number of Designated Responsible Employee for complying with national policies prohibiting discrimination (See 10 CFR 1040.5).	No special format. E-mail information to: IES@go.doe.gov
Environmental Questionnaire. You must complete and submit an Environmental Questionnaire.	https://www.eere-pmc.energy.gov/NEPA.asp
GO-PF19 Financial Assistance Preaward Financial Information Sheet	http://www.go.doe.gov/WordForms/GO-PF19.doc
Budget Justification File (GO PF-20). Include both Phase I and Phase II.	For State/Local Governments: http://www.go.doe.gov/WordForms/GO-PF20(SL).doc For all other applicants: http://www.go.doe.gov/WordForms/GO-PF20.doc
Subaward Budget Justification File(s) (GO PF-20). Include both Phase I and Phase II.	For State/Local Governments: http://www.go.doe.gov/WordForms/GO-PF20(SL).doc For all other applicants: http://www.go.doe.gov/WordForms/GO-PF20.doc

E. SUBMISSION DATES AND TIMES.

1. **Pre-application Due Date.** Pre-applications are not required.

2. **Application Due Date.** Applications **must be received by January 25, 2006 not later than 6:00 PM Eastern Time**. You are encouraged to transmit your application well before the deadline. APPLICATIONS RECEIVED AFTER THE DEADLINE WILL NOT BE REVIEWED OR CONSIDERED FOR AWARD.

F. INTERGOVERNMENTAL REVIEW

This program is not subject to Executive Order 12372– Intergovernmental Review of Federal Programs.

G. FUNDING RESTRICTIONS

Cost Principles Costs must be allowable in accordance with the applicable Federal cost principles referenced in 10 CFR part 600.

Pre-award Costs. Recipients may charge to an award resulting from this announcement pre-award costs that were incurred within the ninety (90) calendar day period immediately preceding the effective date of the award, if the costs are allowable in accordance with the applicable Federal cost principles referenced in 10 CFR part 600. Recipients must obtain the prior approval of the contracting officer for any pre-award costs that are for periods greater than this 90 day calendar period.

Pre-award costs are incurred at the applicant's risk. DOE is under no obligation to reimburse such costs if for any reason the applicant does not receive an award or if the award is made for a lesser amount than the applicant expected.

H. OTHER SUBMISSION AND REGISTRATION REQUIREMENTS

1. **Where to Submit.**

APPLICATIONS MUST BE SUBMITTED THROUGH GRANTS.GOV TO BE CONSIDERED FOR AWARD. Submit electronic applications through the "Apply for Grants" function at www.Grants.gov. If you have problems completing the registration process or submitting your application, call Grants.gov at 1800-518-4726 or send an email to support@grants.gov.

2. **Registration Process.**

You must COMPLETE the one-time registration process (all steps) before you can submit your first application through Grants.gov (See www.grants.gov/GetStarted). **We recommend that you start this process at least two weeks before the application due date.** It may take 14 days or more to complete the entire process. Use the Grants.gov Organizational Registration Checklists at <http://www.grants.gov/assets/OrganizationRegCheck.doc> to guide you through the process.

IMPORTANT: During the CCR registration process, you will be asked to designate an E-Business Point of Contact (EBIZ POC). The EBIZ POC must obtain a special

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password called "Marketing Partner identification Number" (MPIN).

In addition to the links provided above, Appendix B will also assist you in the registration process.

PART V - APPLICATION REVIEW INFORMATION

A. CRITERIA

- 1. Initial Review Criteria** Prior to a comprehensive merit evaluation, DOE will perform an initial review to determine that (1) the applicant is eligible for an award; (2) the information required by the announcement has been submitted; (3) all mandatory requirements are satisfied; and (4) the proposed project is responsive to the objectives of the funding opportunity announcement.
- 2. Merit Review Criteria. All sub-criteria are considered of equal weight.**

Criterion 1: Project Description and Implementation Plan Weight: [30%]

- The clarity and responsiveness of the application to research priorities identified in this announcement
- The technical merit, quality, clarity, and feasibility of the proposed work (i.e., is it based on sound scientific/engineering principles and on an understanding of current state of the art in the applicable industry with references to knowledge of past developments in the work proposed)
- Clarity, adequacy and completeness of the project activities and schedule (description of each activity/task to be performed to accomplish the project goals/objectives and address environmental and safety issues, if appropriate)
- Adequacy, reasonableness and soundness of the Project Management Plan (task structure, milestones, go/no-go decision points, schedules and performance measures for evaluating progress with regard to key tasks and/or deliverables) to achieve project objectives; and the likelihood of the of the proposed approach to resolve challenges and barriers
- Adequacy, appropriateness, and reasonableness of the proposed resources (budget under various categories), and resource distribution to the team members to complete the proposed project and accomplish the stated objectives

Criterion 2: Energy Benefits, Economic Viability, and Environmental Benefits Weight: [35%]

- The potential for the proposed technology to achieve energy savings over existing technology. The energy savings will be evaluated by considering the adequacy, technical merit, assumptions, references and completeness of the applicant's energy savings estimates, including evidence for understanding of the market factors that influence realization of the saving potential
- General applicability, timeliness, and economic viability of the proposed technology (i.e., probability of commercial application) and the potential for enhancing the economic competitiveness of domestic industrial end users.
- The environmental benefits will be evaluated by considering the adequacy, technical merit, assumptions, references and completeness of the applicant's environmental benefit estimates and calculations.

Criterion 3: Roles, Responsibilities, and Capabilities Weight: [20%]

- Soundness of the organization structure and lead organization to achieve project objectives

- Team's technical and management qualifications, credentials, capabilities and performance records of all participating organizations and key personnel including consultants with respect to their ability to carry out the proposed effort
- Level of participation by project participants as evidenced by letter(s) of commitment; strength of the teaming arrangements or participating organization and the explicit roles each party will take in achieving project objectives
- The availability of equipment, laboratory and demonstration facilities, analytic support and all other necessary resources (including appropriate manpower) for performing the work proposed

Criterion 4: Industry Involvement and Commercialization Plan Weight: [15%]

- The breadth and depth of the collaboration across industry, academia and other partners
- The project team's characteristics that make them well suited to successfully develop and enable commercialization of the technology
- Identification of and commitment to, a viable mechanism, plan, or path for commercialization of the technology after the second phase of the project, including participation of a credible commercialization partner.

3. Other Selection Factors. The selection official will consider the following program policy factors in the selection process

1. Relevance to ITP Strategy and Planning Project contributes to ITP's Strategic Plan mission objectives and/or harmonizes with or accelerates Multi-Year Plan Pathways identified in the relevant planning documents. (Note: ITP's Strategic Plan and other planning documents can be accessed from <http://www.eere.energy.gov/industry/about/>)

2. Congruity to Current Portfolio Project provides needed portfolio diversity, contributes to portfolio balance across priority technical areas, and /or provides needed adjustment in portfolio risk profile to achieve desired balance with respect to technical approaches, stages of development and technical and commercialization risks. (Note: The current portfolio can be viewed at <http://www.eere.energy.gov/industry/chemicals/portfolio.html>)

3. Maintenance of Industrial Knowledge Base Project supports a "critical mass" of industry expertise and knowledge in universities, industry, or other private sector firms to maintain or improve the U.S. technological advantage and industrial competitiveness.

4. Past Performance: Applicant's past Federal Award performance is considered with respect to its potential effect on accomplishment of portfolio goals.

5. Cost Share: Applicants with non-federal cost share above the minimum may be given higher consideration.

6. Funding Availability/Energy Savings: Availability of funds and the expected energy savings benefits.

B. REVIEW AND SELECTION PROCESS.

1. Merit Review.

Applications that pass the initial review will be subjected to a merit review in accordance with the guidance provided in the "Department of Energy Merit Review Guide for Financial Assistance and Unsolicited Proposals." This guide is available under Financial Assistance, Regulations and Guidance at <http://professionals.pr.doe.gov/ma5/ma5web.nsf/?Open>.

2. Selection.

- The Selection Official will consider the merit review recommendation, program policy factors, and the amount of funds available.
- DOE reserves the right to conduct an independent thirdparty financial capability review for applicants selected for negotiation of an award (including, for a small business, personal credit information for the principal(s) if there is insufficient information to determine financial capability of the organization).

3. Discussions and Award. The Government may enter into discussions with a selected applicant for any reason deemed necessary, including but not limited to: (1) the budget is not appropriate or reasonable for the requirement; (2) only a portion of the application is selected for award; (3) the Government needs additional information to determine that the recipient is capable of complying with the requirements in 10 CFR part 600; and/or (4) special terms and conditions are required. Failure to resolve satisfactorily the issues identified by the Government will preclude award to the applicant.

C. ANTICIPATED NOTICE OF SELECTION AND AWARD DATES. DOE anticipates notifying applicants selected for award by the end of April 2006 and making awards by July 2006.

PART VI - AWARD ADMINISTRATION INFORMATION

A. AWARD NOTICES.

1. **Notice of Selection.** DOE will notify applicants selected for award. This notice of selection is not an authorization to begin performance. (See Part IV.G with respect to the allowability of preaward costs.)

Organizations whose applications have not been selected will be advised as promptly as possible. This notice will explain why the application was not selected.

2. **Notice of Award.** A Notice of Financial Assistance Award issued by the contracting officer is the authorizing award document. It normally includes, either as an attachment or by reference: 1. Special Terms and Conditions; 2. Applicable program regulations, if any; 3. Application as approved by DOE; 4. DOE assistance regulations at 10 CFR part 600, or, for Federal Demonstration Partnership (FDP) institutions, the FDP terms and conditions; 5. National Policy Assurances to Be Incorporated As Award Terms; 6. Budget Summary; and 7. Federal Assistance Reporting Checklist, which identifies the reporting requirements.

B. ADMINISTRATIVE AND NATIONAL POLICY REQUIREMENTS.

1. **Administrative Requirements.**

The administrative requirements for DOE grants and cooperative agreements are contained in 10 CFR part 600 (See: <http://ecfr.gpoaccess.gov>), except for grants made to Federal Demonstration Partnership (FDP) institutions. The FDP terms and conditions and DOE FDP agency specific terms and conditions are located on the National Science Foundation web site at http://www.nsf.gov/awards/managing/fed_dem_part.jsp.

2. **Special Terms and Conditions and National Policy Requirements.**

Special Terms and Conditions and National Policy Requirements

The DOE Special Terms and Conditions for Use in Most Grants and Cooperative Agreements are located at <http://grants.pr.doe.gov>. The National Policy Assurances to Be Incorporated As Award Terms are located at <http://grants.pr.doe.gov>.

Intellectual Property Provisions

The standard DOE financial assistance intellectual property provisions applicable to the various types of recipients are located at http://www.gc.doe.gov/techtrans/sipp_matrix.html.

C. REPORTING.

Reporting requirements are identified on the Federal Assistance Reporting Checklist, DOE F 4600.2, attached to the award agreement. See <http://www.go.doe.gov/PDFs/46002.pdf> for the proposed Checklist for this program.

PART VII - QUESTIONS/AGENCY CONTACTS

A. QUESTIONS

Questions regarding the content of the announcement must be submitted through the "Submit Question" feature of the DOE Industry Interactive Procurement System (IIPS) at <http://e-center.doe.gov>. Locate the program announcement on IIPS and then click on the "Submit Question" button. Enter required information. You will receive an electronic notification that your question has been answered. DOE will try to respond to a question within 3 business days, unless a similar question and answer have already been posted on the website.

Questions relating to the registration process, system requirements, how an application form works, or the submittal process must be directed to Grants.gov at 1-800-518-4726 or support@grants.gov. DOE cannot answer these questions.

B. AGENCY CONTACT

Name: Sara Wilson

E-mail: IES@go.doe.gov

FAX: 303-275-4754

Comment [sw1]: Are we putting this info out there?

PART VIII - OTHER INFORMATION

A. MODIFICATIONS.

Notices of any modifications to this announcement will be posted on Grants.gov and the DOE Industry Interactive Procurement System (IIPS). You can receive an e-mail when a modification or an announcement message is posted by joining the mailing list for this announcement through the link in IIPS. When you download the application at Grants.gov, you can also register to receive notifications of change through Grants.gov.

B. GOVERNMENT RIGHT TO REJECT OR NEGOTIATE.

DOE reserves the right, without qualification, to reject any or all applications received in response to this announcement and to select any application, in whole or in part, as a basis for negotiation and/or award.

C. COMMITMENT OF PUBLIC FUNDS.

The Contracting Officer is the only individual who can make awards or commit the Government to the expenditure of public funds. A commitment by other than the Contracting Officer, either explicit or implied, is invalid.

D. PROPRIETARY APPLICATION INFORMATION

Patentable ideas, trade secrets, proprietary or confidential commercial or financial information, disclosure of which may harm the applicant, should be included in an application only when such information is necessary to convey an understanding of the proposed project. The use and disclosure of such data may be restricted, provided the applicant includes the following legend on the first page of the project narrative and identifies the pages of the application which are to be restricted:

"The data contained in pages _____ of this application have been submitted in confidence and contain trade secrets or proprietary information, and such data shall be used or disclosed only for evaluation purposes, provided that if this applicant receives an award as a result of or in connection with the submission of this application, DOE shall have the right to use or disclose the data herein to the extent provided in the award. This restriction does not limit the government's right to use or disclose data obtained without restriction from any source, including the applicant."

To protect such data, each line or paragraph on the pages containing such data must be specifically identified and marked with a legend similar to the following:

"The following contains proprietary information that [name of applicant] requests not be released to persons outside the Government, except for purposes of review and evaluation."

E. EVALUATION AND ADMINISTRATION BY NON-FEDERAL PERSONNEL.

In conducting the merit review evaluation, the Government may seek the advice of qualified non-Federal personnel as reviewers. The Government may also use non-Federal personnel to conduct routine, nondiscretionary administrative activities. The applicant, by submitting its application, consents to the use of non-Federal reviewers/administrators. Non-Federal reviewers must sign conflict of interest and nondisclosure agreements prior to reviewing an application. Non-Federal personnel conducting administrative activities must sign a non disclosure agreement.

F. INTELLECTUAL PROPERTY DEVELOPED UNDER THIS PROGRAM.

Patent Rights. The government will have certain statutory rights in an invention that is conceived or first actually reduced to practice under a DOE award. 42 U.S.C. 5908 provides that title to such inventions vests in the United States, except where 35 U.S.C. 202 provides otherwise for nonprofit organizations or small business firms. However, the Secretary of Energy may waive all or any part of the rights of the United States subject to certain conditions. (See "Notice of Right to Request Patent Waiver" in paragraph G below.)

Rights in Technical Data Normally, the government has unlimited rights in technical data created under a DOE agreement. Delivery or third party licensing of proprietary software or data developed solely at private expense will not normally be required except as specifically negotiated in a particular agreement to satisfy DOE's own needs or to insure the commercialization of technology developed under a DOE agreement.

Special Protected Data Statutes This program is covered by a special protected data statute. The provisions of the statute provide for the protection from public disclosure, for a period of up to 5 years from the development of the information, of data that would be trade secret, or commercial or financial information that is privileged or confidential, if the information had been obtained from a non-Federal party. Generally, the provision entitled, Rights in Data – Programs Covered Under Special Protected Data Statutes, (10 CFR 600 Appendix A to Subpart D), would apply to an award made under this announcement. This provision will identify data or categories of data first produced in the performance of the award that will be made available to the public, notwithstanding the statutory authority to withhold data from public dissemination, and will also identify data that will be recognized by the parties as protected data.

G. NOTICE OF RIGHT TO REQUEST PATENT WAIVER.

Applicants may request a waiver of all or any part of the rights of the United States in inventions conceived or first actually reduced to practice in performance of an agreement as a result of this announcement, in advance of or within 30 days after the effective date of the award. Even if such advance waiver is not requested or the request is denied, the recipient will have a continuing right under the award to request a waiver of the rights of the United States in identified inventions, i.e., individual inventions conceived or first actually reduced to practice in performance of the award. Any patent waiver that may be granted is subject to certain terms and conditions in 10 CFR 784.

Domestic small businesses and domestic nonprofit organizations will receive the patent rights clause at 37 CFR 401.14, i.e., the implementation of the Bayh-Dole Act. This clause permits domestic small business and domestic nonprofit organizations to retain title to subject inventions. Therefore, small businesses and nonprofit organizations do not need to request a waiver.

APPENDIX A – DEFINITIONS

“Amendment” means a revision to a solicitation.

“Applicant” means the legal entity or individual signing the Application. This entity or individual may be one organization or a single entity representing a group of organizations (such as a Consortium) that has chosen to submit a single Application in response to a solicitation.

“Application” means the documentation submitted in response to a solicitation. NOTE: Application is referred to as Proposal in IIPS.

“Authorized Organization Representative (AOR)” is the person with assigned privileges who is authorized to submit grant applications through Grants.gov on behalf of an organization. The privileges are assigned by the organization’s Business Point of Contact designated in the CCR.

“Award” means the written documentation executed by a DOE Contracting Officer, after an Applicant is selected, which contains the negotiated terms and conditions for providing Financial Assistance to the Applicant. A Financial Assistance Award may be either a Grant or a Cooperative Agreement.

“Budget” means the cost expenditure plan submitted in the Application, including both the DOE contribution and the Applicant Cost Share.

“Budget Period” means the interval of time, specified in the award, into which a project is divided for budgeting and funding purposes.

“Consortium (plural consortia)” means the group of organizations or individuals that have chosen to submit a single Application in response to a solicitation.

“Continuation Award” means an award for a succeeding or subsequent Budget Period after the initial Budget Period of either an approved Project Period or renewal thereof.

“Contracting Officer” means the DOE official authorized to execute Awards on behalf of DOE and who is responsible for the business management and nonprogram aspects of the Financial Assistance process.

“Cooperative Agreement” means a Financial Assistance instrument used by DOE to transfer money or property when the principal purpose of the transaction is to accomplish a public purpose of support or stimulation authorized by Federal statute, and Substantial Involvement (see definition below) is anticipated between DOE and the Applicant during the performance of the contemplated activity.

“Cost Sharing” means the respective share of Total Project Costs to be contributed by the Applicant and by DOE. The percentage of Applicant Cost Share is to be applied to the Total Project Cost (i.e., the sum of Applicant plus DOE Cost Shares) rather than to the DOE contribution alone.

“Central Contractor Registry (CCR)” is the primary database which collects, validates, stores and disseminates data in support of agency missions. Funding Opportunity Announcements which require application submission through Grants.gov require that the organization first be registered in the CCR at <http://www.grants.gov/CCRRegister>.

“Credential Provider” is an organization that validates the electronic identity of an individual through electronic credentials, PINS, and passwords for Grants.gov. Funding Opportunity Announcements which require application submission through Grants.gov require that the individual applying on behalf of an organization first be registered with the Credential Provider at <http://www.grants.gov/CredentialProvider>

“Data Universal Numbering System (DUNS) Number” is a unique nine character identification number issued by Dun and Bradstreet (D&B). Organizations must have a DUNS number prior to registering in the CCR. Call 1866-705-5711 to receive one free of charge. <http://www.grants.gov/RequestaDUNS>

“E-Business Point of Contact (POC)” is the individual who is designated as the Electronic Business Point of Contact in the CCR registration. This person is the sole authority of the organization with the capability of designating or revoking an individual’s ability to submit grant applications on behalf of their organization through Grants.gov. <http://www.grants.gov/assets/EBIReqCheck.doc>

“E-Find” is a Grants.gov webpage where you can search for Federal Funding Opportunities in FedGrants. <http://www.grants.gov/FindGrantOpportunities?search=basic>

“Fedgrants.gov” is the official website where you can locate Federal Funding Opportunities <http://fedgrants.gov/Applicants/index.html>

“Financial Assistance” means the transfer of money or property to an Applicant or Participant to accomplish a public purpose of support authorized by Federal statute through Grants or Cooperative Agreements and subawards. For DOE, it does not include direct loans, loan guarantees, price guarantees, purchase agreements Cooperative Research and Development Agreements (CRADAs), or any other type of financial incentive instrument.

“Federally Funded Research and Development Center (FFRDC)” means a research laboratory as defined by Federal Acquisition Regulation 35.017.

“Funding Opportunity Announcement (FOA)” is a publicly available document by which a Federal agency makes known its intentions to award discretionary grants or cooperative agreements, usually as a result of competition for funds. Funding opportunity announcements may be known as program announcements, notices of funding availability, solicitations, or other names depending on the agency and type of program.

“Grant” means a Financial Assistance instrument used by DOE to transfer money or property when the principal purpose of the transaction is to accomplish a public purpose of support or stimulation authorized by Federal statute, and no Substantial Involvement is anticipated between DOE and the Applicant during the performance of the contemplated activity.

“Grants.gov” is the “storefront” web portal which allows organizations to electronically find and apply for competitive grant opportunities from all Federal grantmaking agencies. Grants.gov is THE single access point for over 900 grant programs offered by the 26 Federal grantmaking agencies. <http://www.grants.gov>

“Industry Interactive Procurement System (IIPS)” is DOE’s Internet based procurement system which allows access to DOE’s business opportunities database, allows user registration and submittal of Applications: <http://e-center.doe.gov/>

"Key Personnel" means the individuals who will have significant roles in planning and implementing the proposed Project on the part of the Applicant and Participants, including FFRDCs.

"Marketing Partner Identification Number (MPIN)" is a very important password designated by your organization when registering in CCR. The Business Point of Contact will need the MPIN to login to Grants.gov to assign privileges to the individual(s) authorized to submit applications on behalf of your organization. The MPIN must have 9 digits containing at least one alpha character (must be in capital letters) and one number (no spaces or special characters permitted).

"Participant" for purposes of this Solicitation only, means any entity, except the Applicant substantially involved in a Consortium, or other business arrangement (including all parties to the Application at any tier), responding to the Solicitation.

"Project" means the set of activities described in an Application, State plan, or other document that is approved by DOE for Financial Assistance (whether such Financial Assistance represents all or only a portion of the support necessary to carry out those activities).

"Project Period" means the total period of time indicated in an award during which DOE expects to provide financial assistance. A project period may consist of one or more Budget Periods and may be extended by DOE.

"Proposal" is the term used in IIPS meaning the documentation submitted in response to a solicitation. Also see Application.

"Pure Edge Viewer" is a small, free program which allows you to access, complete and submit applications electronically and securely through Grants.gov. You will not be able to access, complete, or submit an application through Grants.gov, unless the Pure Edge Viewer is downloaded on your computer. <http://www.grants.gov/DownloadViewer>.

"Recipient" means the organization, individual, or other entity that receives a Financial Assistance Award from DOE, is financially accountable for the use of any DOE funds or property provided for the performance of the Project, and is legally responsible for carrying out the terms and condition of the award.

"Selection" means the determination by the DOE Selection Official that negotiations take place for certain Projects with the intent of awarding a Financial Assistance instrument.

"Selection Official" means the DOE official designated to select Applications for negotiation toward Award under a subject solicitation.

"Substantial Involvement" means involvement on the part of the Government. DOE's involvement may include shared responsibility for the performance of the Project; providing technical assistance or guidance which the Applicant is to follow; and the right to intervene in the conduct or performance of the Project. Such involvement will be negotiated with each Applicant prior to signing any agreement.

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"Total Project Cost" means all the funds to complete the effort proposed by the Applicant, including DOE funds (including direct funding of any FFRDC) plus all other funds that will be committed by the Applicant as Cost Sharing.

APPENDIX B – GRANTS.GOV

Prior to submitting an application in Grants.gov, you must COMPLETE the one-time registration process (all steps) at www.grants.gov/GetStarted which may take up to 14 days due to coordination of steps. Therefore, you are highly encouraged to register as soon as possible. The following points are provided to assist you in the registration process.

In addition to the links provided in the Announcement, we are providing Appendix B to assist you in the registration process. Please read through the information below prior to starting the registration process. This information will assist you in making the registration process as seamless as possible. It is important to follow the steps in the order outlined below, allowing the time specified between each of the steps.

Request a DUNS Number - Follow the instructions at <http://www.grants.gov/RequestaDUNS>. It is highly recommended that the DUNS number be requested by telephone at 1866-705-5711, which will take about 10 minutes. There is no charge. Once the telephone registration is completed, you must allow 24 hours before attempting to use the DUNS number in the next step of registering with the Central Contractor Registry (CCR).

Register with the Central Contractor Registry (CCR) - Go to <http://www.grants.gov/CCRRegister> and click on the "Help" button to locate the tutorial. Print the tutorial for reference and follow the instructions in the link above. We also recommend that you print and complete the 7page CCR Worksheet at <http://www.ccr.gov/CCRRegTemplate.pdf> prior to registration, as it may take up to 3 days to gather the information needed for the worksheet. You are required to designate an Electronic Business Point of Contact (EBusiness POC) and a Marketing Partner Identification Number (MPIN) in the CCR. It is important to provide the MPIN to the EBusiness POC. For assistance with the CCR, contact the Assistance Center at 1-888-227-2423 or at CCR@dis.dla.mil. You may also access the CCR Handbook at <http://www.ccr.gov/handbook.cfm>.

Install the PureEdge Viewer – Authorized Organization Representatives (AORs) are the individuals that will be given the authority to submit applications on behalf of their organization. All AORs must download and install the PureEdge Viewer on their computer by following the instructions at <http://www.grants.gov/DownloadViewer>. This small, free program will allow AORs to access, complete, and submit applications electronically and securely. If you encounter any problems, contact customer Support at 1800-518-4726 or support@grants.gov. (This step may be done earlier in the process).

Register with the Credential Provider - AORs must register with the Credential Provider. AORs must wait a minimum of 3 business days for the CCR to become active before attempting to register with the credential provider. Go to <http://www.grants.gov/CredentialProvider> and click on the "Help" button to locate the tutorial. Print the tutorial for reference and follow the instructions in the link above. Record the user ID and password that you enter because you will need this information to register with Grants.gov as an AOR. AORs must wait approximately 20 minutes after completing the Credential Provider registration before going to the next step of registering with Grants.gov. If you encounter any problems, the Credential Provider may be reached at 800-386-6820 or via email at authhelp@orc.com or pkihelp@orc.com.

Register with Grants.gov - AORs must register with Grants.gov, utilizing the User ID and password obtained from registering with the Credential Provider. Go to <https://apply.grants.gov/GrantsgovRegister#> and click on the "Help" button to locate the tutorial. Print the tutorial for reference and follow the instructions in the link above. After you have completed the Grants.gov registration process, you will receive a confirmation that indicates whether your registration was successful.

After AORs successfully register with Grants.gov, an email will be generated to the E-Business Point of Contact (POC) that was designated in the CCR, informing them that an individual from their organization has registered in Grants.gov to be an AOR, capable of submitting applications in Grants.gov on behalf of their organization. (Further Information regarding the Electronic Business POC is provided below.) AORs will not be able to submit an application until they receive authorization from the E-Business POC. **If the AOR does not receive an email authorization from the E-Business POC within 1 business day, contact the E-Business POC.** If you encounter any problems, contact customer Support at 1-800-518-4726 or support@grants.gov

Designate Privileges to the AOR - The Electronic Business POC is the sole authority of the organization with the capability of designating, or revoking, an individual's ability to submit grant applications on behalf of their organization through Grants.gov. Once the E-Business POC receives the email notification from the individual wishing to be recognized as an AOR, the E-Business POC should go to <https://apply.grants.gov/AorMgrGetID> click on the "Help" button to locate the tutorial, print the tutorial for reference, then log on utilizing the DUNS Number and the Marketing Partner Identification Number (MPIN) that was designated by their organization when registering in the CCR and follow the instructions for designating privileges to the AOR. If you cannot locate the MPIN, contact the CCR Assistance Center at 1-888-227-2423 or at CCR@dlis.dla.mil.

Submit Application in Grants.gov - Once the E-Business POC has authorized privileges to the AOR, the AOR will receive an email notification that they have been given authorization. The AOR may then proceed to submit an application in Grants.gov (see the "Install the PureEdge Viewer" step above). For application instructions go to <http://www.grants.gov/Apply>. The training demonstration at <http://www.grants.gov/CompleteApplication> will assist AORs in the application process.

Remember that you must open and complete the Application For Federal Assistance (SF 424) first, as this form will automatically populate data fields in other forms. If you encounter any problems, contact customer Support at 1-800-518-4726 or at support@grants.gov. If you forget your user name or password, follow the instructions provided in the Credential Provider tutorial.

NOTE: Tutorials may be printed by rightclicking on the tutorial and selecting "print". In addition to the tutorials, the User Guide is a valuable resource. The User Guide is found at http://www.grants.gov/GrantsGov_UST_Grantee/SSL/WebHelp/userguide.doc.

APPENDIX C – STAGE GATE PROCESS

The DOE ITP Innovative Energy Systems program will be managing its portfolio of projects utilizing Stage-Gate™ principles (a registered trademark of R.G. Cooper & Associates), a methodology which has been successfully applied throughout industry and government. To assist DOE in effectively managing its projects it is important that all proposed projects be structured utilizing these principles. More information on Stage-Gate principles can be found in *"Best Practices for Managing R&D Portfolios,"* Robert Cooper, S. Edgett, and E. Kleinschmidt, Research Technology Management, Industrial Research Institute, Volume 41, Number 4, July-August 1998, and *"Optimizing the Stage-Gate Process, Part II,"* Robert Cooper, Research Technology Management, Industrial Research Institute, Volume 45, Number 6, November-December 2002.

The basic approach of a Stage-Gate program is that there is a series of "gates" to review and "stages" to accomplish the work necessary to move a project forward. The Stage-Gate process consists of 5 Gates and 5 Stages, which are as follows:

Gate	Stage	Title	Phase
1	1	Preliminary Investigation	I
2	2	Concept Definition & Detailed Investigation	I
3	3	Concept Development	I
4	4	Validation & Technology Development	II
5	5	Commercial Launch	II

It is anticipated that most proposed research and development projects under Phase I will be in the Concept Definition/Detailed Investigation stage (Stage 2) or in the Concept Development stage (Stage 3) of the Stage-Gate process, and will already be beyond the Preliminary Investigation stage (Stage 1). Applications need to indicate which stage the technology is in at the time the application is submitted. Projects that move into Phase II of this Announcement will need to move through Gate 4 into Stage 4, the Validation/Technology Development stage. The end of Stage 3, Concept Development, will be the end of the Award's first Budget Period and Gate 4 will serve to downselect the number of projects and allow DOE to determine, along with budgetary and other considerations, those projects to be granted a Continuation Award.

As laid out by Stage-Gate process, projects in Stages 2 and 3 must have a detailed plan with milestones and checkpoints for progress. Following this approach, DOE will require a detailed milestone/checkpoint list for each R&D project proposed under this Announcement. While milestones/checkpoints are not expected to be reached in exactly equal time intervals, they should not be spaced further than approximately 3 months apart. To assure that the proposed R&D project is on track, a short update report should be submitted when a checkpoint/milestone is reached. At each milestone/checkpoint the project will need to decide whether:

- a) the project **passes**, meaning the project work is on track as originally outlined.

- b) the project is in **recycle** mode, meaning the checkpoint/milestone has not been accomplished but the project looks promising and hence, more time is allowed to reach the proposed milestone/checkpoint. If the decision is made to recycle the project, the project will need to revise the milestone/checkpoint schedule.
- c) the project is **stopped** because the project development is not progressing as it should.

Project decisions should be documented in the quarterly reports provided to DOE and, if circumstances warrant (e.g. decision is made to stop the project), the DOE Project Officer should be contacted as soon as possible.

APPENDIX D - COMMERCIALIZATION PLAN

The following is meant to provide some input and guidance regarding what issues, concerns, and opportunities should be addressed in a commercialization plan:

- Market Characterization
 - What is the market need being addressed?
 - Why is this technology/system an improvement over current practices?
 - What is the competition for this technology/system?
 - How strong is the market pull for this technology/system?
- Understanding and addressing the product cycle, with emphasis on addressing market introduction and how to get from market introduction to adequate market penetration needed to reach the stated goals:
 - First Cost
 - Installed Cost
 - O&M Costs
 - Operational Goals
- Establish commercialization and product implementation goals, identifying the marketing and technology transfer paths to be utilized to reach those goals.
- Provide the economic analyses necessary to prove the financial viability of the proposed technology/system.
- Provide for sensitivity analyses (what if scenarios), analyzing the impact on commercialization potential if the project goals are not met:
 - "What if" first & installed costs are 10% and 25% above the stated goals
 - "What if" operating and maintenance costs exceed the stated goals by 10% and 25%
 - "What if" environmental goals are reduced by 10% and 25%
- Identify and analyze potential competing technologies/systems that are in development and could provide competition within the next 5 years.
- Discuss intellectual property management (describe the current state of patents that cover and affect the proposed technology / product, how future patents and licensing issues will be handled, and what effect do these issues have on the commercialization of the product / technologies).
- Present what types of partners/entities are needed to reach the stated commercialization goals and why? Describe any partnerships that exist today.
- Identify potential market barriers and how they will be addressed & overcome.
- Provide a schedule of milestones, deliverables, and tracking mechanism (consistent with the "stage-gate" process established for the entire project) to guide the commercialization efforts.

APPENDIX E – REFERENCE CHECKS ON FEDERAL AWARDS

Submit information for at least five and no more than eight federal awards that were received by either organization or principal investigator in the last five years for technologies relevant to this solicitation with award values in excess of \$100,000. If applicant has fewer than five awards meeting this criteria, first submit those that meet the criteria and for the remainder, applicant shall provide information for federal awards over \$2,500.00 received by either the organization or principal investigator for all technologies in the last five years.

<i>Sample Format</i>						
<i>(Complete items 1-6 below for each federal award. Duplicate this chart on supplementary sheets as necessary)</i>						
(1) AWARD TITLE	(2) INSTRUMENT NO.	(3) Total Award Value (\$)	(4) PERIOD OF PERFORMANCE FROM: THRU:		(5) APPLICANT'S PROJECT DIRECTOR (Name, address, zip code, area code and telephone no.)	(6) FEDERAL AGENCY MAKING AWARD (Agency name, Federal Program Manager. address, zip code, telephone.)
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